

ENSC 427: COMMUNICATION NETWORKS

FINAL PROJECT PRESENTATIONS

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Video Streaming Over WiMAX Technology

Dona Patikiriarachchi

Farshad Taghizadeh

Parmeet Kaur

www.sfu.ca/~dap1/427_webpage.html

dap1@sfu.ca

fta1@sfu.ca

pka17@sfu.ca

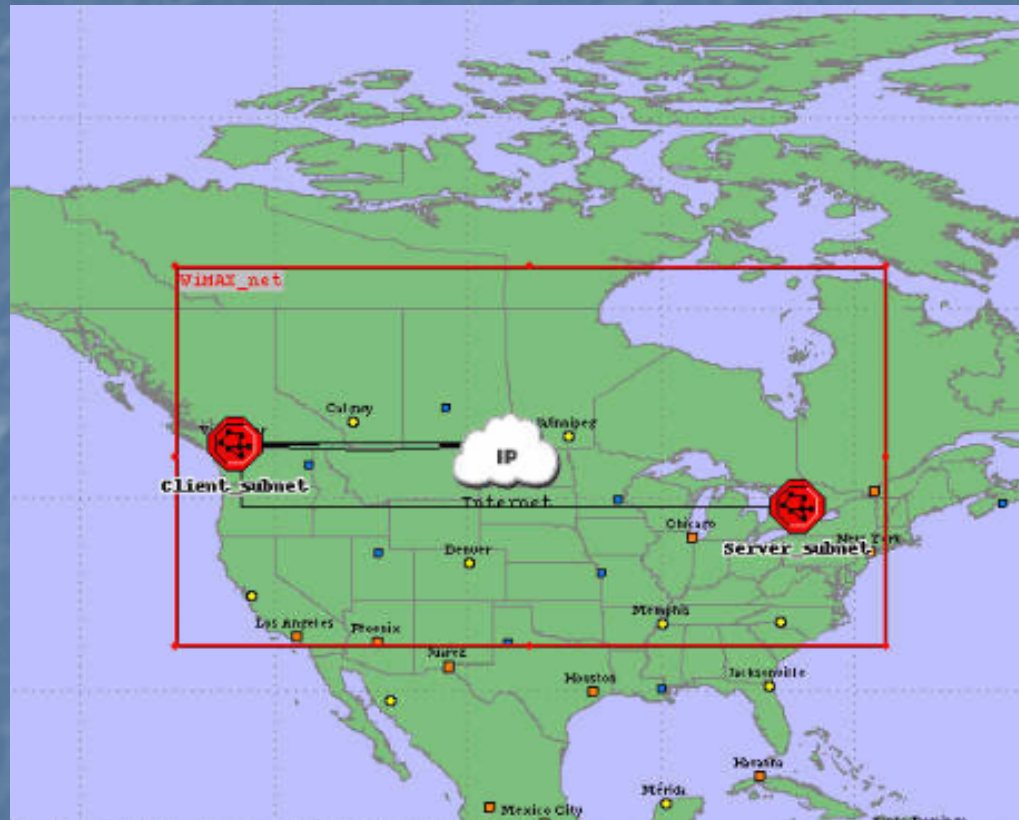
Introduction

- Video streaming using WiMAX technology
- One fixed station, several clients
- Video streaming between client and server
- Simulating and analyzing statistics

WiMAX

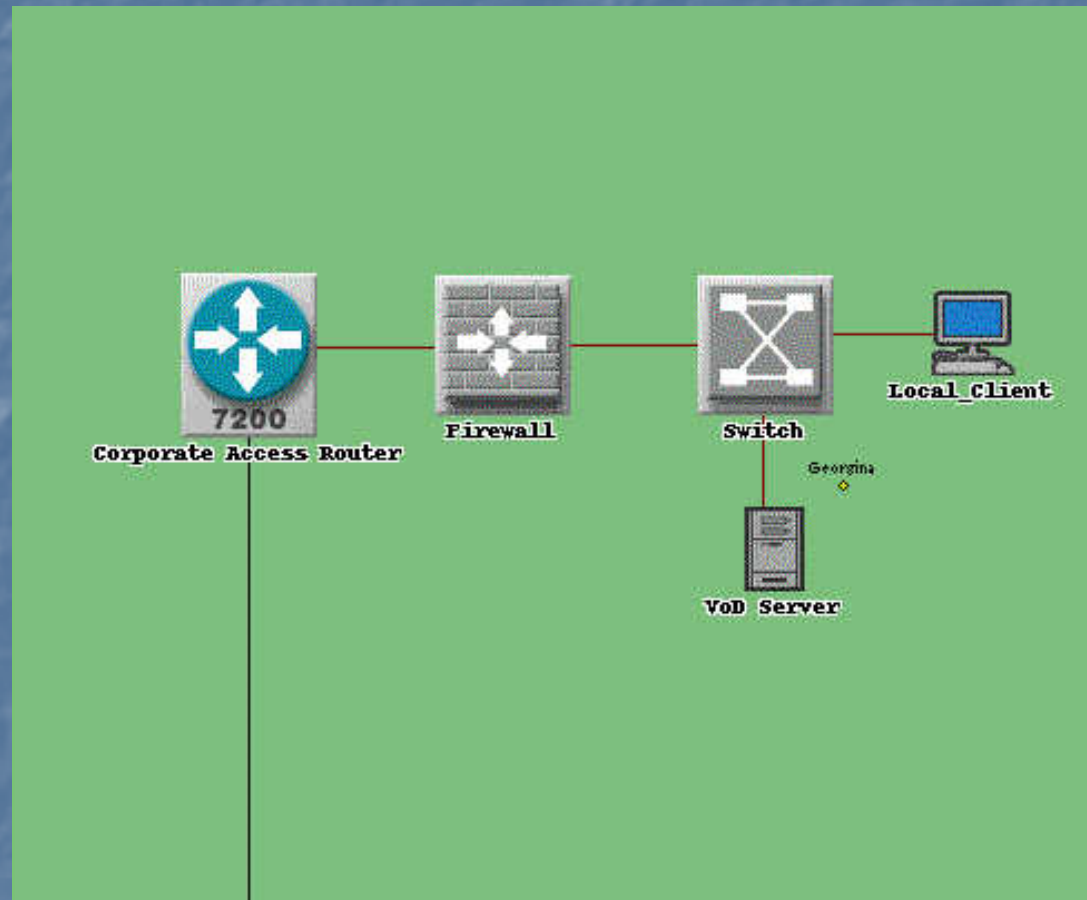
- Worldwide inter-operability for Microwave Access
- WiMAX is an all-IP infrastructure deployed in a point-to-multi-point (PMP) topology where one or more subscribers communicate with a WiMAX base station
- Two types: fixed, mobile
- High speed internet over 'last mile'
- Replaces ADSL, T1 lines

Network Model



- Data transmission between client and server
- The Internet “cloud” was configured with a packet discard ratio of 0.001%, which results in one packet being dropped out of every 100,000 packets in the Internet

Server Model



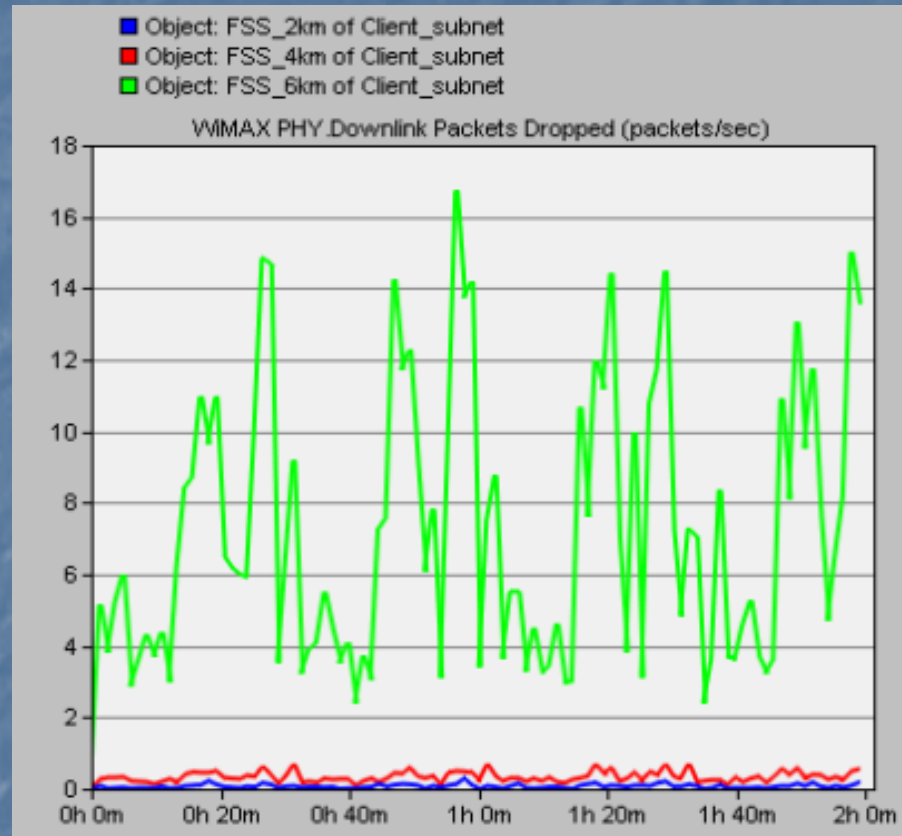
- VoD server – Video on Demand server sends video data

Client Model



- Base station covers the 3 regions shown

Packet loss



- 6km exhibits a much higher loss rate over 2hr
- The longer the distance, the higher the packet loss due to interference, signal degradation.

Discussion

- Connecting Wi-Fi hotspots to the internet
- Providing data & telecommunication services
- Within defined boundaries WiMAX demonstrated promising behavior

Future work

- Incorporating audio data
- Compare with Wi-Fi
- WiMAX Mobile station configuration
- Creating more base stations to increase coverage

References

- W. Hruday, Opnet Model "Streaming video content over WiMAX and ADSL access networks", Aug. 2008
- W. Hruday, "Streaming Video Content Over IEEE 802.16 / WiMAX Broadband Access", pp. 7-8, April 2008
- Z. Abichar, P. Yanlin, and J.M. Chang, "WiMax: The Emergence of Wireless Broadband", IT professional, vol. 8, issue 4, pp. 44-48, July-Aug. 2006